New Claims 14-23 have been added, which are drawn to narrower and more preferred embodiments of the invention.

All amendments find support in the claims and specification as originally filed.

Upon entry of these amendments, Claims 1, 3-4, 9-10, and 12-23 will be active. Entry and favorable consideration are kindly requested.

REQUEST FOR RECONSIDERATION

Applicants thank Examiner Jackson for the courteous and helpful discussion held with Applicants' U.S. representative on September 17, 2002. At that time, the Examiner indicated that Claims 9 and 13 should have been included in the rejection over the JP '974 and Katono references. Under the circumstances, and as was discussed during the interview, Applicants kindly request the Examiner to consider the amendments and arguments submitted herein though this case is under final.

Applicants submit herewith an English translation of the JP '974 reference for the Examiner's consideration.

The rejection over JP '974 and Katono is respectfully traversed.

As was discussed during the interview, the references provide no teaching regarding those embodiments of the invention which contain a carboxylic acid or wherein the lubricating particle contains either graphite carbon or polytetrafluoroethylene. The applied references are completely silent on these claimed elements. Thus, Claims 3, 14, 19, 20 and 23 should be immediately allowable over the cited references. The references are similarly

silent regarding a C_{5-12} metal carboxylate wherein the metal is not an alkali metal or calcium, and thus Claim 22 is likewise allowable.

With respect to the broadest claim in the case, Claim 1, it is believed that no *prima facie* case of obviousness exists because neither reference suggests that the embodiment of the claimed composition which requires C_{5-12} metal carboxylates would work any better than similar compositions having metal carboxylates outside the claimed range. If the Office deems that *prima facie* obviousness nevertheless exists, it is believed to be obviated by the data already of record in the specification.

A review of the English translation of JP '974 shows that it appears to be closer to the claims than the Katono reference. Whereas JP '974 relates to a welding wire, Katono relates to steel which is to be formed or deep-drawn (Katono column 1, lines 12-15). Indeed, based on the JP '974 disclosure, the English translation of which is provided, there is no motivation to combine Katono and no expectation of success in the combination.

The JP '974 reference recites that smooth wire feeding results from a "synergistic effect" owing to the components in its coating. See, e.g., JP '974 English translation page 3, lines 3-5 from the bottom. These components are one or both of molybdenum disulfide and tungsten disulfide, one or more metal soaps, and lanolin. The reference also requires particular amounts of each component. Thus, it would not be obvious to depart from either the members or the amounts required for the JP '974 composition. See, e.g., JP '974 English translation paragraphs [0007] - [0010]. The reference does not disclose C_{5-12} metal carboxylates and instead mentions only "potassium soap, sodium soap, and calcium soap" in its coating. JP '974, page 4, lines 1-2 from the bottom. The reference provides no guidance

as to what the composition of these soaps might be, and there is nothing in the reference to suggest that the claimed C_{5-12} metal carboxylates and carboxylic acids would work any better than any other metal carboxylates and carboxylic acids.

Applicants submit that even *prima facie* obviousness, were it established over the references, is obviated by the data already of record in the specification. Applicants have attached Tables 8-1 to 8-3 from pages 32-34; Tables 8-6 and 8-7 from page 37; Corrected Tables 9-1 and 9-2 (corrected by Preliminary Amendment filed with this application); and Tables 9-4 and 9-6 from page 40 for the Examiner's consideration.

Applicants first note that none of the invention or comparative examples contain lanolin, in contrast to JP '974 (which requires lanolin), and many of the invention and comparative examples have compositions with amounts outside the ranges required by JP '974. Thus, the invention is compared to compositions that are even closer to the invention than JP '974. This is permitted as noted in MPEP 716.02(e).

In particular, Applicants point out invention Examples 6 and 17 (Tables 8-1 and 8-2) and comparative Examples 53, 62, and 63 (Tables 8-6 and 8-7) and the corresponding results in Tables 9-1, 9-2 (for the invention examples) and Tables 9-4 and 9-5 (for the comparative examples).

In the data, potassium carboxylate-containing compositions within the claims are compared to potassium carboxylate-containing compositions outside the claims. Invention Example 6 contains potassium octylate (8 carbon fatty acid) and MoS_2 + C (lubricating particle) and is comparable to comparison Example 53, which contains potassium acetate (2 carbons) and MoS_2. Invention Example 17 contains potassium linderate (12 carbons) and

MoS_2 and is comparable to comparison Example 53, which contains potassium acetate (2 carbons) and MoS_2 and comparison Examples 62 and 63, which both contain potassium stearate (18 carbons) and MoS_2.

Turning to the results in Tables 9-1, 9-2 (for the invention examples) and Tables 9-4 and 9-5 (for the comparative examples), it is clear that invention Example 6 has better feed resistance, feed resistance stability and degree of clogging than does comparative Example 53. Similarly, invention Example 17 has better feed resistance and feed resistance stability than both comparative Examples 62 and 63 and better degree of clogging than comparative Example 63.

It is evident from the data already of record in the specification that the claimed invention inheres superior properties when compared to compositions that are even closer than the closest prior art. Applicants kindly request the Examiner to withdraw the rejection over JP '974 and Katono and pass this case to issue.

This application is now believed to be in condition for allowance, and early notice of such action is kindly solicited.

Respectfully submitted,

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IN THE CLAIMS

Please amend the claims as indicated below.

--1. (Three Times Amended) A welding wire comprising

a wire having a wire surface; and

a deposit on the wire surface, wherein

the deposit comprises

at least one lubricating particle, and

at least one compound selected from the group consisting of (a) saturated or unsaturated, linear or branched, carboxylic acid having from 5 to 12 carbon atoms; (b) saturated or unsaturated, linear or branched, metal carboxylate having from 5 to 12 carbon atoms, and mixtures of (a) and (b) [carboxylic acids and metal carboxylates];

and wherein the at least one lubricating particle comprises a material selected from the group consisting of molybdenum disulfide, tungsten disulfide, graphite carbon and polytetrafluoroethylene[;

the at least one compound consists of atoms selected from the group consisting of hydrogen, carbon, oxygen, nitrogen, sulfur, phosphorus and metal atoms; and

the at least one compound has a saturated or unsaturated, linear or branched, structure with from 5 to 12 carbon atoms].

3. (Three Times Amended) The welding wire according to Claim 1, wherein the at least one compound [comprises] is a carboxylic acid selected from the group consisting of pentanoic acid, caproic acid, caprylic acid, octylic acid, secanoic acid, capric acid, decanoic acid, lauric acid, linderic acid and synthetic fatty acids.

4. (Three Times Amended) The welding wire according to Claim 1, wherein

the compound [comprises] is a metal carboxylate that is a metal salt of a carboxylic acid selected from the group consisting of pentanoic acid, caproic acid, caprylic acid, octylic acid, secanoic acid, capric acid, decanoic acid, lauric acid, linderic acid and synthetic fatty acids; and

the metal salt comprises a metal selected from the group consisting of Li, Na, Mg, Al, K, Ca, Ti, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Sn, Cs, Pb and Ce.

10. (Three Times Amended) The welding wire according to Claim 9, wherein the at least one compound and at least one lubricating particle are [deposited] present on the wire surface in a total amount of 0.1 to 5 g per 10 kg of the wire.

12. (Three Times Amended) The welding wire according to Claim 1, wherein the at least one compound and the at least one lubricating particle are [deposited] present on the wire surface in a total amount of 0.1 to 5 g per 10 kg of the wire.

13. (Amended) A method of making [a] welding wire of Claim 1, the method comprising:

coating [a] the wire with [a] the deposit[, and

producing the welding wire of Claim 1].--

--Claims 14-23 are new.--

that ◎ indicates an amount of clogging of 0.002 g or below, ○ indicates an amount exceeding 0.002 g but not greater than 0.005 g, △ indicates an amount exceeding 0.005 g but not greater than 0.01 g, and × indicates an amount not less than 0.01 g.

Table 8-1

	No.	Wire/Flux Weight (wt%)	Fatty Acid or Salt thereof	Feed Oil	Lubricating Particles	Amount of Deposited Fatty acid or Salt thereof (g)	Total of Deposits (g)
Example	1	M2/F1, 15%	pentanoic acid	plant oil	WS_2+C	0.2	1.2
	2	M2/F2, 14%	cobalt pentanoate caproic acid	mineral oil synthetic oil	nil	0.09	0.5
	3	B1	lead pentanoate	synthetic oil	MoS_2	0.002	2.1
	4	B4	lead octylate	mineral oil	WS_2	0.005	0.2
	5	B1	manganese octylate secainoic acid	animal oil synthetic oil	nil	0.3	0.9
	6	B2	potassium octylate	plant oil	MoS_2+C	0.2	1.3
	7	B1	octylic acid pottassium octylate			0. 6	0.6
	8	M3/F4, 22%	cobalt caprylate	plant oil synthetic oil	polytetrafluoro ethylene MoS_2	1.5	3.9
	9	B5	manganese caprylate	synthetic oil	nil	1.9	4.9
	10	M3/F3, 16%	caprylic acid zinc laurate	plant oil synthetic oil	polytetrafluoro ethylene	0.6	3.1
	11	B3	manganese caprylate tin caprylate potassium octylate	mineral oil synthetic oil	WS_2 MoS_2	0.1	2.5

Table 8-2

	No.	Wire/Flux Weight (wt%)	Fatty Acid or Salt thereof	Feed Oil	Lubricating Particles	Amount of Deposited Fatty acid or Salt thereof (g)	Total of Deposits (g)
Example	12	M4/F4, 19%	lauric acid	synthetic oil	polytetrafluoro ethylene	0.07	0.9
	13	M2/F1, 14%	lead laurate	plant oil	nil	0.008	0.3
	14	B4	potassium laurate manganese octylate	plant oil mineral oil	MoS_2 polytetrafluoro ethylene	0.4	1.6
	15	B1	lindric acid	mineral oil	MoS_2	0.4	2.0
	16	M2/F1, 14%	manganese linderate	plant oil	MoS_2	1.1	3.2
	17	B2	potassium linderate	synthetic oil	MoS_2	0.04	1.2
	18	B1	zinc laurate	plant oil	MoS_2	0.003	0.8
	19	B4	calcium linderate	synthetic oil	nil	0.09	0.2
	20	M1/F1, 13%	tin caprylate	mineral oil	MoS_2 polytetrafluoro ethylene	0.08	1.5
	21	B2	zirconium octylate	plant oil	MoS_2	1.9	2.3
	22	M2/F2, 14%	iron caproate	plant oil animal oil	WS_2	0.5	1.6
	23	B1	manganese pentanoate	synthetic oil	MoS_2	1.2	3.5
	24	B1	lithium octylate	synthetic oil plant oil	MoS_2	1.8	4.1

Table 8-3

	No.	Wire/Flux Weight (wt%)	Fatty Acid or Salt thereof	Feed Oil	Lubricating Particles	Amount of Deposited Fatty acid or Salt thereof (g)	Total of Deposits (g)
Example	25	B3	copper secanoate	mineral oil plant oil	WS_2	0.008	0.8
	26	M3/F4, 19%	nickel octylate	animal oil	polytetrafluoro ethylene	0.6	1.2
	27	B2	aluminium linderate	plant oil	MoS_2 WS_2	0.3	1.8
	28	B5	titanium laurate	plant oil	nil	0.08	0.4
	29	M4/F3, 20%	cesium octylate	synthetic oil	polytetrafluoro ethylene	0.03	3.1
	30	B1	cesium octylate	mineral oil	polytetrafluoro ethylene	0.1	0.9

Table 8-6

	No.	Wire/Flux Weight (wt%)	Fatty Acid or Salt thereof	Feed Oil	Lubricating Particles	Amount of Deposited Fatty acid or Salt thereof (g)	Total of Deposits (g)
Comparative Example	52	M1/F1, 13%	potassium stearate	plant oil	nil	0.2	1.2
	53	M1/F2, 14%	potassium acetate	plant oil mineral oil	MoS_2	0.1	0.9
	54	B1	sodium stearate	animal oil	MoS_2	0.5	2.2
	55	B2	nil	plant oil synthetic oil	WS_2	0	0.9
	56	M3/F4, 18%	potassium stearate	mineral oil	nil	0.3	1.2
	57	M4/F4, 20%	nil	synthetic oil	polytetrafluoro ethylene	0	1.1
	58	B3	sodium stearate	mineral oil synthetic oil	MoS_2	1.1	2.0
	59	B5	nil	plant oil	WS_2	0	0.8

Table 8-7

	No.	Wire/Flux Weight (wt%)	Fatty Acid or Salt thereof	Feed Oil	Lubricating Particles	Amount of Deposited Cyclic Hydro carbon (g)	Total of Deposits (g)
Comparative Example	60	M2/F1, 13%	sodium stearate	synthetic oil	nil	0.2	1.5
	61	M2/F2, 14%	nil	synthetic oil + mineral oil	WS_2	0	3.2
	62	B2	potassium stearate	plant oil	MoS_2	0.01	0.08
	63	B1	potassium stearate	plant oil + synthetic oil	MoS_2	0.8	1.9
	64	M3/F4, 18%	nil	mineral oil	nil	0	1.5
	65	M4/F4, 20%	potassium stearate	mineral oil	polytetrafluoroet hylene	0.08	2.0
	66	B3	calcium stearate	mineral oil + synthetic oil	WS_2	1.3	5.1
	67	B5	sodium stearate	animal and plant oil	MoS_2	0.3	1.0

Amend page 38, Table 9-1 as follows:

Table 9-1 (Amended)

	No.	Feed Resistance	Feed Resistance Stability	Degree of Clogging
Example	1	○	◎	○
	2	○	○	◎
	3	○	◎	○
	4	○	◎	○
	5	○	○	◎
	6	○	◎	○
	7	○	○	◎
	8	○	◎	○
	9	○	○	○
	10	○	◎	○
	11	○	◎	○

Amend page 38, Table 9-2 as follows:

Table 9-2 (Amended)

	No.	Feed Resistance	Feed Resistance Stability	Degree of Clogging
Example	12	◎	◎	○
	13	○	◎	◎
	14	◎	◎	○
	15	◎	◎	○
	16	◎	◎	○
	17	◎	◎	○
	18	○	◎	○
	19	○	○	◎
	20	◎	◎	◎
	21	◎	◎	○
	22	◎	◎	○
	23	◎	◎	○
	24	◎	◎	○
	25	○	○	○
	26	◎	◎	◎
	27	◎	◎	○
	28	○	○	◎
	29	○	◎	○
	30	◎	◎	◎

Table 9-4

	No.	Feed Resistance	Feed Resistance Stability	Degree of Clogging
Comparative Example	52	○	×	×
	53	△	△	×
	54	○	△	×
	55	△	△	×
	56	○	×	×
	57	△	△	×
	58	○	△	×
	59	△	△	×

Table 9-6

	No.	Feed Resistance	Feed Resistance Stability	Degree of Clogging
Comparative Example	60	○	×	×
	61	△	△	×
	62	×	×	○
	63	○	△	×
	64	△	×	×
	65	○	△	×
	66	○	○	×
	67	○	△	×

As will be apparent from Tables 9-1 to 9-6, in the examples of the invention wherein a lower fatty acid or its salt, or a cyclic fatty acid or its salt is deposited on a wire surface, and a lubricating oil or a mixture of a lubricating oil and lubricating particles are chemically combined on the wire surface, the feedabilities of the wire are improved and stabilized, and the degree of clogging of the lubricating material in the spring line